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East-West-wage rigidity in united Germany: Causes and consequences

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The aim of this paper is to analyze the causes and evaluate the consequences of the rapid wage equalization between eastern and western Germany following economic unification in 1990. The paper is divided into four parts. In Part I, we first summarize the basic facts of the eastern German labour market since economic unification as far as they are relevant for the purpose at hand. We then critically evaluate a few different theories, which have been advanced to explain the observed rapid rise of the eastern real wage level in face of drastically increasing unemployment. In particular, we shall discuss whether the observed facts should be seen as the logical consequence of historically unique economic circumstances (e.g. due to the high East/West-mobility of the labour force or to the end-game characteristics of eastern German wage bargaining), or whether they are better viewed as the 'natural' outcome of German-style corporatism. In Part II, we shall evaluate some normative economic arguments that have been advanced in favour of a rapid East/West-wage equalization; particular emphasis will be put on matters of interregional mobility, human capital accumulation, and the path of structural change. In Part III, we shall sketch the likely long-term consequences of the rapid wage equalization for the eastern German labour markets. In Part IV, we shall draw some policy conclusions on whether there are any policy alternatives to wage differentiation.[1]

I. The Eastern German Labour Market

1. Stylized Facts

Since German economic unification in mid-1990, underemployment in eastern Germany has reached and probably even surpassed the dimension of the Great Depression in the early 1930s. Table 1 gives a rough quantitative picture of the various categories of open and hidden unemployment as they developed in the three consecutive years 1990, 1991 and 1992. Before 1990, unemployment in the command economy of the German Democratic Republic can safely be assumed to have been negligible - though, of course, the employed labour force was heavily

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[1] Given the still poor state of the data on post-socialist eastern German labour markets, our analysis shall be mostly descriptive, with no attempt made to provide an econometric basis to our arguments.

Table 1: Underemployment in Eastern Germany 1990-1992*

	1989	1990	1991	1992
(1) labour force	9858	9188	8382	7896
(2) unemployed persons	0	240	913	1170
(3) East/West-commuters**	0	80	290	350
(4) short-time workers	0	758	1616	370
(5) average short-time work***	0	45.6	55.9	52.1
number of people in ...				
(6) work creation programmes	0	3	183	388
(7) requalification measures	0	11	223	432
(8) early retirement schemes	0	239	543	812
(9) unemployment rate U I[1]	0	2.7	10.9	14.8
(10) unemployment rate U II[2]	0	6.6	21.7	17.3
(11) unemployment rate U III[3]	0	6.7	23.7	21.6
(12) unemployment rate U IV[4]	0	9.1	28.2	27.9
(13) population	16600	16215	15908	15702
(14) rate of labour participation LPI[5]	59.4	55.2	52.7	50.3
(15) rate of labour participation LPII[6]	59.4	54.7	50.9	48.1

Note:
* annual average of quarterly data (1)-(4), (6)-(8) and (13) in '1000; (5) and (9)-(12), (14)-(15) in per cent;

** net balance;

*** in per cent of normal working time; for 1992 estimated by Sachverständigenrat [1992/93], p. 101.

1 Defined as (2)/(1); in %.

2 Defined as [(2)+(4)(5)]/(1); in %.

3 Defined as [(2)+(4)(5)+(6)+(7)]/[(1)+(6)+(7)]; in %.

4 Defined as [(2)+(4)(5)+(6)+(7)+(8)]/[(1)+(6)+(7)+(8)]; in %.

5 Defined as (1)/(13); in %.

6 Defined as [(1)-(3)]/(13); in %.

Data Source: Institut für Weltwirtschaft; Sachverständigenrat [1992/93], p. 101.

underutilized on the job. From this starting-point of close to zero per cent, the 'open' unemployment rate, i.e. the number of registered unemployed persons divided by the labour force (unemployment rate U I) rose to a yearly average of 2.7 per cent in 1990, 10.9 per cent in 1991 and close to 15 per cent in 1992. Including short-time work in the definition of unemployment (weighted by the average non-working time of short-time workers), one obtains an adjusted unemployment rate U II, which moved up much sharper than U I to 6.6 per cent in 1990 and 21.7 per cent in 1991; it declined again thereafter to 17.3 per cent in 1992. However, this adjusted measure is still quite misleading: while the sharp rise of short-time working practice in 1990 and 1991 rightly signals a substitution of employment by a specific form of underemployment, the even more drastic decline of this practice between 1991 and 1992 was accompanied not by a massive rise of genuine employment, but a quite substantial increase of the number of people in work creation programmes, requalification measures and early retirement schemes. Extending the definition of unemployment to include these supplementary forms of 'hidden' unemployment - in the table U III covering people in work creation and requalification programmes, U IV in addition covering people in early retirement schemes - the picture is one of a sharp increase of unemployment between 1990 and 1991 (from around 6-9 per cent to 23-28 per cent) and roughly a stagnation between 1991 and 1992.[2]

Although these extended measures U III and U IV do give a first impression of the true magnitude of actual underemployment, they are to be interpreted very cautiously because they still neglect important catergories of joblessness in eastern Germany. At least two categories stand out in importance. First, a significant part of the labour force in Treuhand firms is still endangered because the respective plants are

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[2] Note that extending the definition of unemployment to include people in requalification programmes and early retirment schemes also requires a definition of the labour force to cover not only the persons in employment (including those in work creation programmes and in short-term work), unemployed persons and the net balance of East/West-commutors, but also persons in the requalification programmes and early retirement schemes, which are usually not counted as part of the labour force.

highly subsidized and will have to close down eventually. At present, there are still about half a million employees in Treuhand firms - 60 per cent of them in industrial plants that are very hard to privatize or restructure -[3] and it would not be surprising if that would amount to a further potential of 300,000 unemployed persons. Second, many unemployed persons - notably female ones - have withdrawn from the labour force into household work. In the labour market, they represent a 'reserve of discouraged workers', which goes well beyond the extent of de-activation that typically happens in cyclical downturns in the West. The fact that the rate of labour force participation - measured as the share of the labour force in the population - has decreased from almost 60 per cent in 1989 to roughly 48-50 per cent in 1992 suggests that this discouraged worker effect may be quite substantial. It is remarkable that labour force participation in the East has already more or less reached the lower western level - despite the probably better average educational standards and labour market experience of women in the East.

At the same time, a rather broad measure of unemployment as U IV may also be regarded as overstating the true dimension of joblessness because it includes those persons, who have retired early and who are likely to be removed from the labour force for good. On the other hand, the massive use of early retirement has led to a decline of the average age of the remaining employed labour force and thus reduced the scope for the natural shrinkage of the labour force through age-induced exits in the next decade or so. Thus, in the short run, early retirement may not increase unemployment; in the medium and long run, however, it deprives the labour market of a natural relief from the labour supply side. Hence if one focuses on the medium and long run of market absorption of surplus labour, then it makes good sense to include persons in early retirement schemes in the definition of unemployment and the labour force. Taking all these speculative considerations into account, it appears to be not unrealistic to assume that about 1/3 of the eastern German labour force is today unemployed in one form or another.

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[3] See Deutsches Institut für Wirtschaftsforschung, Institut für Weltwirtschaft 1993.

A sectoral breakdown of the contraction of employment is given in Table 2. It shows that, between the last quarter of 1989 and the fourth quarter of 1992, there was a clearcut sectoral pattern in the magnitude of the shrinkage: employment declined most sharply in agriculture and forestry (-67.6 per cent) followed by industry (-48.9 per cent), trade and transport (-27.7 per cent) and services in the narrow sense, including government (-20.8 per cent). Due to its previously very high share in total employment (44.6 per cent), the absolute decline was most dramatic in industry, which released more than two million workers, followed by agriculture (662,000); in turn, the decline in the service sectors (in the broad sense) was relatively moderate. The intersectoral pattern becomes even more accentuated, if one distinguishes three main branches of industry, namely construction, energy (including mining) and manufacturing: while employment in construction and energy remained roughly constant, employment in manufacturing declined almost as sharply as in agriculture.

Parallel to the dramatic contraction of employment, real wages rose substantially. The first wave of collective agreements in major branches of industry and services in summer 1990 generally fixed the contractual minimum wage at around 50 per cent of the western level in the respective branches, in construction even up to 72 per cent.[4] As early as spring 1991, most collective agreements stipulated a stepwise increase of the contractual minimum wage up to 100 per cent of the western level as of spring 1994.[5] In terms of actual earnings, the rise of nominal and real wages in the years 1990 and 1991 is portrayed in Table 3. Roughly speaking, the monthly wage of an average industrial employee (white and blue collar taken together)[6] rose from around 30 per cent to

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[4] For details, see Sachverständigenrat [1990/91], Tabelle 20, pp. 70-75.

[5] For details, see Sachverständigenrat [1991/92], Tabelle 32, pp. 112-115, and [1992/93], Tabelle 30, pp. 107-110.

[6] For 1990 and 1991, the data on eastern wages as compiled by the Federal Statistical Office does not disaggregate according to white- or blue-collar status in the comparative statistics for East and West, because the dividing line between the two categories would have been quite arbitrary in the early post-socialist eastern economy.

Table 2: Employment in Eastern Germany 1990/I-1990/IV*

	level (in '000)		share (in %)		change 1989/IV - 1992/IV	
	1989/IV	1992/IV	1989/IV	1992/IV	abs. (in '000)	rel. (in %)
Total	9754	6297	100.0	100.0	-3457	-35.4
of which						
agriculture, forestry	980	318	10.0	5.1	- 662	-67.6
industry	4350	2225	44.6	35.3	-2125	-48.9
trade, transport	1651	1193	16.9	18.9	- 458	-27.7
services, government	2773	2195	28.4	34.9	- 578	-20.8
work creation programmes	0	366	0.0	5.8	+ 366	.

* Roman numbers refer to quarters.

Source: Own calculations from DIW, IfW [1993], Table 1, p. 4.

Table 3: Changes in Wages and Prices Following Currency Union

	W_E	W_E/W_W	P_0	P_C	W_E/P_0	W_E/P_C
1/90	1184	0.31	-	-	-	-
4/90	1168	0.30	98.4	98.3	100.0	100.0
7/90	1393	0.35	64.2	94.5	182.8	124.1
10/90	1588	0.39	62.9	100.6	212.6	132.8
1/91	1667	0.42	63.3	108.9	221.9	128.8
4/91	1926	0.47	63.2	112.6	256.7	144.0
7/91	1996	0.47	63.1	115.1	266.3	146.0
10/91	2086	0.49	63.3	126.9	277.9	138.4

Notes: W_E = Average gross monthly wages of blue and white collar workers in the East (total industry); W_E/W_W = wage ratio East to West in per cent; Source: Statistisches Bundesamt, FS 16, Reihe 2.1, various issues; P_0 (P_C) = price index of industrial producer prices (price index of the cost of living) in the five Eastern Länder, 1989 = 100; Source: Statistisches Bundesamt, FS 17, Reihe 3 and Wirtschaft und Statistik, various issues; W_E/P_0 (W_E/P_C) = real product wages (real consumption wages), 4/1990 = 100. Due to missing data the real wages indices for 4/1990 were calculated using the price indices for 5/1990.

Source: Burda, Funke [1992].

about 50 per cent of the respective western level within less than two years. Althouh no comparable data are yet available for later times, a further rise up to about 65-70 per cent in the course of the year 1992 is likely to have taken place. All over this period, the respective ratio of hourly earnings is probably somewhat lower all throughout because average working time in the East (excluding short-time work) has been persistently higher than in the West, roughly by a margin of 5-10 per cent; however, there is no doubt that the sharp upward trend of nominal wages relative to the West applies equally to all standard measures of worker remuneration.

The rise of the eastern nominal wage translates into quite divergent developments of the real wage, depending on whether nominal earnings are deflated by the eastern producer price index, which declined sharply in mid-1990 and remained roughly constant thereafter, and the consumer price index, which rose continuously over the sample period covered in the table. Thus the producer real wage shot up by more than 80 per cent between May and July 1990 and by another 50 per cent in the following months up to October 1990. In turn, the respective upward adjustments of the consumer real wage were more moderate, about 24 per cent and 11.5 per cent respectively. Of course, given the statistical difficulties of calculating price indices in an early post-socialist environment, which is still characterized by heavily distorted prices and thus widespread shortages in submarkets as still was the case in East Germany in spring 1990, these calculations must be taken with more than a grain of salt. Nevertheless, there can hardly be any doubt that German economic unification in mid-1990 was accompanied by something like a free fall of producer prices that ceteris paribus led to a dramatic rise of the producer real wage. Equally, it is undisputable that, from mid-1990, both the producer real wage and the consumer real wage rose quite continuously, and that the former did so considerably faster than the latter.

Concerning the future prospects of eastern wage growth, the contents of most collective agreements as of 1991 pointed to an equalization of contractual minimum levels between West and East in most industries by the year 1994. Most recently, major contracts have been renegotiated and now envisage the respective wage equalization by 1996. However, this does not imply that actual earnings will be equalized by then as well. This is so for two reasons. First, the contractual agreements cover the core elements of remuneration only; many contractual fringe benefits have not yet been negotiated to reach the western level in the near future or have simply not been subject to collective bargaining at all. Second, there is a persistent, cyclically rather stable 'layer' of supercontractual payments in the West, which has mostly built up in the time of overemployment in the 1960s and which has never melted away since then. Obviously, there have not yet been any market forces which could have helped to build up such a layer in the East as well. Hence, even if - ceteris paribus - contractual minima were equalized by 1994, a significant wage difference between West and East would remain. A highly tentative guess based on the role of fringe benefits and supercontractual payments in the West is that this residual difference may remain in the range of 20 per cent by the mid-1990s, a number, though, which should be treated with extreme caution.

So much for the basic labour market facts. The task of explaining and interpreting these facts falls into two parts, one of them quite easy, the other much more difficult and challenging. The easy part concerns the explanation of the crisis itself: what were the forces at work in German economic unification? What made it such a disastrous event for the labour market? As these questions have been answered rather uniformly in the literature[7] we shall be rather brief on this matter. The difficult part concerns the explanation of the coincidence of sharply rising unemployment with rapidly rising wages: why did labour, notably unions, push for fast wage increases in the face of dramatically worsening labour market conditions in the East? What made them opt for an early wage equalization between the 'old-capitalist' and the 'post-socialist' parts of the economy? As these questions are much more controversial in the literature, we shall try to answer them in somewhat more detail.

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[7] See, e.g., Akerlof et al. [1991]; Sinn, Sinn [1991]; Giersch, Paqué, Schmieding [1992], Chapter 6; Siebert [1992].

2. The Causes of the Crisis

Briefly summarized, the breakdown of the East German labour market may be described and interpreted as follows. With German unification in mid-1990, the East German economy was subjected to a huge liberalization shock, both internally and externally. Internally, the system of centrally administered price setting, production controls, and trade management was abolished in basically one stroke so that a completely new price system and incentive structure in virtually all newly emerging markets put heavy adjustment pressures on the factors of production. Externally, the economy was stripped off its almost watertight system of protection, which had kept it isolated from western capitalism; the opening up further accentuated the adjustment pressures, especially in manufacturing industries which were suddenly facing a fierce international competition in their home markets. It is clear that this once-for-all jump into a liberal market order was bound to lead to a wholesale devaluation of all physical and human capital, or more precisely: an immediate disclosure of the real value of all assets at world market prices. Naturally, large parts of the capital stock - above all in industries producing tradeable goods - was to become obsolete almost over night at the prevailing wages, which were converted 1 : 1 from the 'soft' Ost-Mark into the 'hard' D-Mark and, as a consequence, a vast, almost universal capital shortage emerged with the concomitant open or hidden unemployment. On top of this, wages rose rapidly from their original 1 : 1 D-Mark-level at the day of economic unification and thus further worsened the extent of capital obsolescence and unemployment.

Except for the subsequent wage push, the 'core' of the crisis - not, of course, its sheer size and its abruptness - resembles the classical 'terms-of-trade'-crises that sunset industries in western Germany faced in the mid-1970s and early 1980s: given the structure of world demand and the extent of competition from abroad, domestic products could not be sold at a price that covered at least short-run average cost. At a given physical productivity of labour, the declining product prices reduced the respective value productivity of labour at given employment. Note that the terms-of-trade loss revealed through liberalization in eastern Germany was probably even much more dramatic than the roughly 30 per cent-decline visible in the statistics (Table 3) because that decline - and the subsequent stability - took place at rapidly shrinking levels of production and employment, i.e. at a steeply decreasing market supply of domestic goods. To soften the landing of the liberalization in terms of employment, a very dramatic nominal wage cut would have been necessary, of course much more dramatic than the often quoted physical productivity differential between West and East. E.g., if one assumes that the ratio of physical labour productivity between East and West was somewhere between 1 : 2 and 1 : 3, a number often floated in the public discussion at the time, and that this would have been the guideline for the East/West-differential, then not all that much would have been gained in terms of a softer landing: in fact, the actual earnings differential up to late 1991 (see Table 3) was approximately in this range, and nevertheless, the crisis took shape in its actual disastrous dimension.

In view of this diagnosis, one can conclude that German economic unification pushed the East German economy into a deep structural supply-side crisis with a capital shortage of a previously unknown dimension. Some authors[8] claim that, on top of this dramatic supply-side crisis, there was also a lack of demand which severely aggravated the emerging downturn. This lack of demand is mainly identified with the immediate demand shift of eastern consumers away from 'shabby' eastern consumption goods to the more fancy products manufactured in western Germany, which took place as soon as the Easterners received 'hard' D-Marks for their previously non-convertible East-Mark balances. Although, of course, such a demand shift or preference revelation did take place, it is in our view misleading to attribute anything more to a genuine demand factor than a very short-run crisis in the consumer goods industries. The rationale for our judgement is simple: only to the extent that the East/West-preference shift was a strictly temporary phenomenon which corrected itself as soon as the first glamour of western products was fading away, one might speak of a temporary lack

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[8] Notably Franz [1991], and, to some extent, Akerlof et al. [1991].

of demand for domestic, i.e. eastern consumer goods.[9] To the extent that the shift remained permanent, however, it was nothing else than another indicator for the overall terms-of-trade loss of eastern industry: given the price ratio of any two pair of substitutable East/West-goods at the day of economic unification, there was an oversupply of the eastern and an undersupply of the western good so that equilibrium could have been restored only by a readjustment of this price ratio to the disadvantage of the East, given the totality of characteristics (quality, design etc.) which the two products had. Thus the seeming lack of demand, properly reinterpreted, boils down to another variant of supply-side deficiencies of the eastern products. If one were to call any such permanent preference shift a lack of (aggregate) demand, then one would altogether blur the distinction between demand and supply on the macro level; in fact, this happens quite often in popular discussions of the matter.

Apart from this conceptual argument against the lack-of-demand interpretation of parts of the crisis, it is questionable on empirical grounds how much the eastern German consumer goods industry really suffered from such-like shifts. After all, the interindustrial pattern of production decline shows consumption goods industries (except textiles) and in particular the food industries to have experienced a much less pronounced downturn in production than the investment goods industries where demand shift effects due to preference revelation are unlikely to have played a significant role. In fact, the pattern of production activity after unification nicely confirms that the main determinants of the strength of the downturn are to be found in the tradeability of the respective products and their degree of genuine qualitative and functional inferiority relative to the West; thus investment goods industries have in general experienced the sharpest contraction, much sharper than on the one hand most basic materials industries (notable exception: chemicals), which are often naturally protected by the high

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9 Even then, one might argue that it is far from clear why this lack of demand in the market for consumption goods should have translated into a lack of aggregate demand, i.e. a decline of aggregate absorption.

transportation costs of their products and which are likely to have disproportionally profited from the relatively early upturn in construction activity, and much sharper than many consumption goods industries, notably the food industry, where products are relatively homogenous so that the East/West-difference in quality proved not very dramatic and often easily curable through a simple repackaging and restyling according to the new consumer preferences.[10]

3. The Causes of the Eastern Wage Push

The really puzzling fact about the eastern German labour market is not the extent of the emerging unemployment, but rather the immediate sharp rise of nominal and real wages after economic unification and the prospective contractual wage equalization between East and West by the mid-1990s. Quite a few different attempts have been made in the literature to explain this fact, most of them identifying some 'special' historical circumstances that distinguished the eastern German situation from that of a 'normal' labour market. In the academic and public debate, there are four prominent explanations of this kind, which focus on (a) the conditions of German monetary union, (b) the pressure of East/West-migration, (c) the asymmetry of collective bargaining, i.e. the strength of the unions and the weakness of employers, and (d) the end-game characteristics of wage bargaining. We shall review and critically evaluate these four non-exclusive explanations in the following paragraphs.

(a) The Role of German Monetary Union

It has been argued notably before and right after German economic unification that the 'generous' conversion rate of the formerly non-convertible Ost-Mark into D-Mark of 1:1 (instead of, say, 1:2 or 1:3) would raise eastern labour costs to disastrously high levels and

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10 For statistical details on the development of industrial production from the second half of 1990 to December 1992, see Deutsches Institut für Wirtschaftsforschung, Institut für Weltwirtschaft [1993], pp. 64, Tabelle A1.

thus quite dramatically aggravate the labour market imbalance.[11] This argument is not plausible because it is based on assumptions about wage bargaining that appear to be very unrealistic precisely for the specific case of post-socialist eastern Germany. On theoretical grounds, a different starting-level of the wage can only make a difference for the outcome of subsequent wage bargaining if, roughly speaking, the subject of collective agreements is the *rate of change* of the wage, not its *level*. If it is the level alone, the mere establishing of a different starting-point does per se not give a reason for a different outcome beyond the very short run, i.e. the time span up to the first bargaining round. To be sure, eastern German wage bargaining after economic unification has been an almost classical example of bargaining about wage *levels*, not relative wage increases, with the negotiated wage agreements usually formulated as a share of the western level in the same industry or, especially in the early bargaining rounds, as a fixed minimum DM-level; at the same time the implicit percentage increases were hardly discussed and went largely unnoticed in the public. This is altogether plausible: from the very beginning, the public looked at eastern German wages almost exclusively in terms of the eastern share of the western level, not on the extent of marginal improvements that were to be achieved. Thus a lower starting point would most likely have induced no more than a sharper once-for-all upward shift in the first bargaining round.[12]

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[11] For an academic statement along these lines, see Akerlof et al. [1991], p. 64.

[12] Note that, in such circumstances of almost complete calculation in terms of an exogenous wage standard ('the West'), even the preservation of a seperate currency like, say, a convertible Ost-Mark would by itself have changed very little; any exchange rate adjustment would have been fully compensated by a corresponding opposite change of the wage level in Ost-Mark so that the wage ratio East to West would have remained roughly constant at the ratio agreed upon in collective bargaining. Of course, assuming the survival of the Ost-Mark alone is a purely hypothetical exercise because, if it had happened, it is very likely that some forms of trade and mobility restrictions would also have been preserved and that the institutional merging of East and West would have been much slower than was in fact the case. Given the political constraints of the time, it is doubtful whether this was ever a realistic political option.

Even if the conversion rate were accepted as an important determinant of the early outcomes of wage bargaining after unification (say, the ones in summer and fall 1990), it does in any case not help to explain why - from this then collectively agreed base level - wages continued to rise all throughout 1991, despite a clearly visible dramatic worsening of the labour market conditions. To repeat, the actual starting-level of the eastern wage was around 1/3 of the western level in the early summer 1990 (see Table 3) - much too high to avoid a severe employment contraction, but still way off parity so that a very substantial inner-German wage difference could have been preserved even at this stage. In fact, hardly anybody advocating a different conversion rate made a case for a substanially larger wage differential than 1:3, which roughly conformed to the East/West physical productivity differential floated at the time.[13] Hence, clearly, the major wage push took place well after the establishment of German monetary union and at a time when the extent of the employment contraction had become quite evident.

(b) The Pressure of East/West-Migration

By far the most widespread and popular view on the eastern wage push is that it was a reaction to the pressure exerted by large parts of the eastern German labour force which stood ready to move or in fact did move to western Germany to find work there.[14] In the light of the early heavy waves of East/West-migration right after the opening of the inner-German border, this view has some prima facie plausibility. On closer inspection, however, it is not convincing at all: as a market phenomenon, migration can only exert an upward pressure on the wage if the labour force that moves or threatens to move is in fact a scarce resource, not an abundant one. Roughly speaking, this happens whenever the economy finds itself in a state of full employment. This has

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[13] That this differential was largely irrelevant for the labour market has been argued above.

[14] This view has been expressed in the public by many journalists and politicians on numerous occasions. For an academic statement and a formal analysis of it, see Burda, Funke [1992a], and Burda, Wyplosz [1992], who also provide some statistics on East/West-migration in the crucial year 1990 (p. 334).

manifestly not been the case in eastern Germany since 1989 where employers can hardly be assumed to have a strong incentive to pay workers mobility premia to stay in the East simply because competition for jobs on the labour supply side is so intense. If there were partial scarcities in some segments of the labour market, i.e. for highly skilled workers with excellent prospects of finding jobs in the West, then premia might be paid in these particular segments, but not for the workforce at large; given the high unemployment in virtually all labour market segments of the eastern German economy in the last two to three years - even among well-qualified workers - it is hard to see much market rationale for any such selective premia.[15]

It is important to realize that, if migration were the driving force behind the prospective inner-German wage equalization, then collective bargaining would only have a kind of passive role to play - just more or less reproducing what market forces would have achieved anyway. Given the very puzzle of fast real wage growth at dramatically rising unemployment, such an interpretation of the facts looks close to absurd. On the other hand, one might make a case for an indirect, non-market impact of migration on union wage policy: with (western-)dominated unions recognizing the threat of massive East/West-migration and its consequent depressive effects on western wage levels, they put priority on a rapid wage equalization to remove the economic rationale for the migration streams.[16] Plausible as it is on first glance, this argument makes a very unrealistic implicit assumption, namely that unions completely misjudged the economic rationale of the East/West-movements.[17] As all standard migration models recognize, it is the *expected* income differential that matters for the migration decision of the individual agent, not the *actual* wage differential.[18] If a monopoly union representing western labour interests and facing a

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15 For a similar line of reasoning, see Akerlof et al. [1991], pp. 62-63.

16 For a formal analysis along these lines, see Burda, Funke [1992a].

17 See explicitly Burda, Funke [1992a], p. 17.

18 See very clearly on this point, Meckl [1992].

downward-sloping labour demand curve in the East takes this into account, then wage equalization is obviously not an optimal strategy to achieve the aim of minimizing the number of East/West-migrants. Instead, in setting the eastern wage, the union has to weigh the expected *decline* of the number of migrants from the pool of *employed* persons against the expected *increase* of the number of migrants from the pool of *unemployed* persons, which expands due to the agressive wage policy. Given an elasticity of the labour demand function with respect to the real producer wage in the empirically relevant range (say, around -1), it is then quite unlikely that the union would choose a wage equalization as an optimal strategy: anticipating that a large part of the eastern workers would be pushed into unemployment, i.e. a state where they receive in the German framework less than 70 per cent of their previous net wage (which at the time was still no more than 50 per cent of the western level), a union, which aims at minimizing migration flows from the labour supply side would hardly opt for the actually observed pattern of sharp wage growth in the East. Only if one assumed an implausibly thick veil of ignorance on the union's side about the labour market consequences of wage demands could one be hopeful to reconcile the observed wage growth with a rationale anti-migration union policy. Then, however, the question arises why the unions did not reverse their course as soon as the sheer extent of the labour market crisis became visible.[19]

(c) Asymmetry of Bargaining Power

It has been argued i.a. by Akerlof et al. [1991] that one major reason for the sharp rise in wages was a kind of organizational asymmetry between the labour and the employers' side at the bargaining table of all major industrial branches: while labour was represented by the newly founded eastern German wings of powerful and experienced western unions like, e.g., the metal workers' union (IG Metall), most of the eastern managers at the bargaining table were still survivors of the old regime whose

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[19] Note that our rejection of migration pressures as an explanation of the rapid rise of eastern wages has no implications for the question whether the prospective wage equalization did in fact help to curb the East/West-migration flows, and if so, whether this was a good thing or not. This matter will be delt with in Part II below.

future professional destiny was largely independent of the actual outcome of the wage negotiations. In these circumstances, the resistence of the employers' side against wage demands was naturally very weak.[20]

This argument is certainly correct in the sense that the wage negotiations which took place were not genuine bargaining rounds with parties that have at least partially conflicting aims. Nevertheless, the argument somehow begs the question because it does *not* give a rationale why unions should opt for wage equalization on their own: after all, in standard monopoly union models, the wage is unilaterally determined in an optimization by the union under the constraint of a labour demand curve which then fixes the level of employment.[21] Hence what the argument says is that, basically, the situation of bargaining after unification is best described by a monopoly union model, with employers taking the union-set wage as given. However, this kind of model does only predict sharp wage increases, if, in the relevant range, the labour demand curve is quite inelastic so that there is in fact much scope for the monopolistic union to appropriate rents. Thus one has to search for reasons why labour demand as perceived by the unions is likely to have been inelastic with respect to the real producer wage.

One obvious candidate to explain such a perceived lack of elasticity is the extent of subsidization, i.e. the 'soft budget constraints' of eastern firms:[22] all along the time of the decisive wage bargaining rounds from about summer 1990 to autumn 1991, virtually all firms of the state-owned holding company, the Treuhand, were heavily subsidized to keep up production and employment; most of the subsidies were paid out in the form of liquidity grants so that, roughly speaking, the degree of subsidization was directly linked to the extent of the losses made. As a consequence, a very large part of the non-privatized firms in eastern Germany was simply not pursuing a profit-maximizing calculus in any meaningful sense so that, for the time being, there was certainly not

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20 For details, see Akerlof et al. [1991], pp. 63-64.

21 See, i.a., Farber [1986].

22 See Burda, Funke [1992a] and Sinn, Sinn [1991].

anything like a downward sloping labour demand curve resulting from any such calculus. Although this was in fact the state of affairs at the time of collective bargaining, it is much less clear how long this state of heavy subsidization was expected to continue in the future, and whether not, eventually - be it in the wake of privatization or in the course of a restructuring as a publicly owned company - profit maximizing principles with their consequences for the slope of the labour demand curve would reemerge. A speculative assessment of the debate at the time would almost certainly suggest that the state of affairs was widely perceived as a temporary emergency, not as anything like a long-term equilibrium. In fact, the already drastic rise of unemployment and short-time work in the 15 months of decicive wage bargaining following economic unification makes it quite implausible to assume that unions did actually not recognize the growing unemployment risks for their clientele entailed in an all too aggressive wage policy.

Other candidates than subsidization to explain a low real wage elasticity of labour demand lead to the fourth hypothesis, namely that wage bargaining had the characteristics of an end game.

(d) End Game Bargaining

So-called end game situations arise in wage bargaining whenever a firm or an industry is clearly dying in the sense that there are no realistic prospects of recovery under any feasible adjustment scheme. Prospective investment in such a firm or industry will be zero whatever the level of wages simply because there is already more capital engaged in production than is actually needed. As a consequence, the long-run real wage elasticity of labour demand will also be low so that it pays off for unions to appropriate the quasi rents of the firm by raising the wage.[23] In a way, the situation is the opposite to a soft budget constraint: precisely

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[23] For an exposition of a model along these lines, see Lawrence, Lawrence [1985].

because everybody knows that the firm will stop producing, labour has an incentive to 'plunder' the remaining capital stock.[24]

Though intriguing in its own right, this model does not properly describe the eastern German situation either: while for many state-owned eastern German firms, the market prospects were very bad indeed, there were probably very few cases where it was clear from the beginning that an eventual return to profitability was altogether impossible. By far most of the firms found themselves somewhere between the prospect of extinction and a more or less successful restructuring. In addition, the wage at which bargaining started (say, 30 per cent of the western level) was probably high enough to appropriate a large chunk of all quasi rents of existing firms[25] so that any further increase would really just mean 'appropriating subsidies' for which case we are back at the question of the likely duration of government support.

A more fundamental objection to the end game interpretation is that collective agreements set wages not only for the existing firms, but - as usual in Germany - also for all future firms of the respective industrial branch, provided they are members of an employers' association. Thus, analytically, the bargaining could never be of an isolated end game character; rather it also fixed the conditions for future investments of other firms in the same branch. If the employment effects of these prospective future investments were taken into account in the union monopoly calculus - and there is no reason why unions should have disregarded them - then the end game model loses much of its appeal. To be sure, the model appears to be much better designed to describe a plant-level bargaining in the face of a prospective plant closure than industry- or nation-wide bargaining which sets the conditions for continued employment and/or reemployment of all relevant union members.

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24 The end-game model has been proposed i.a. by Burda, Funke [1992a, 1992b] to explain the peculiarities of the East German labour market.

25 See Akerlof et al., [1991], pp. 61-62.

In a different context, however, a specific variant of the end game interpretation may shed considerable light on the puzzle of sharply rising wages. In view of the fact that large-scale lay-offs were expected to happen in eastern Germany in any case, wage increases were a means to secure higher benefit levels for the laid-off workforce in the prospective spell of unemployment. As German unemployment benefits are calculated as a share of the terminal net wage - roughly speaking 68 per cent for the first year and 58 per cent thereafter - the wage increases did in fact quite dramatically improve the 'entrance conditions' into the benefit system. As unemployment benefits are regularly adjusted upwards according to the rate of increase of the old-age insurance benefits, which, in turn, are more or less indexed to the level of net wages, the stepwise increase of the wage level was really a major move towards opening the door to the welfare state for the eastern German labour force.

Plausible as this welfare state variant of the end game interpretation appears to be, it is very hard to speculate about its actual relevance. Empirically, there is no direct clue in the facts and the data that could help to determine how important these kinds of considerations were in the back of union leaders' minds compared to the standard trade-off between job security and income of the union membership. Two indirect facts, though, may speak against an all too dominant role of them. First, if they had been really dominant, then it would even be hard to explain why unions agreed to stretch the adjustment process over a few years: after all, the bulk of the prospective lay-offs was likely to happen in the two years following economic unification which were still a time of an East/West-wage ratio of generally below 60 per cent. Second, there was no attempt made by unions to lobby for a temporary de-linking of the level of unemployment benefits (together with old-age pensions) from the general rise of wages: if the unions had simultaneously aimed at improving the lot of those members, who unavoidably lost their jobs, and of those, whose jobs were endangered by high wage rises, then a generous provision of unemployment benefits at a more moderate pace of wage growth would have been an attractive option. Under the special circumstances of eastern Germany, another temporary deviation from standard practices might have been accepted rather easily by the public at large, not least if it had been coupled with a rise of old-age pensions because pensioners were generally regarded as the real losers of unification.[26]

So much for the four major hypotheses that seek to find the explanation for the eastern wage push in the particular historical circumstances of German unification. All of them shed light on some peculiar economic characteristics of the unification process, with the social end-game interpretation having the lead in terms of plausibility. Taking an intuitive view of the matter, however, it is hard to consider even a combination of all four hypotheses as a satisfactory explanatory account of the events. The main reason for this judgement lies in the almost deterministic appearance of the path towards wage equalization. From the very-beginning right after the currency union was established, wage negotiations in the East seemed to be strangely unaffected by the dramatic change of external conditions. All major wage rounds in fall 1990 and in spring 1991 proceeded swiftly, without much public controversy on their content and without much press coverage. Remarkably enough, the partly parallel negotiations in the West received much more public attention - thus indicating that the West was widely regarded as the wage pacemaker for a united Germany and the East as following suit in due course through East/West-wage equalization.[27] Apparently, it looked much less unusual to the general public than to economists to see wages move up sharply in the face of rising unemployment in the East. This raises the question whether the fact to be explained was not so unusual after all; it may just as well have been a logical consequence of an ever present deep-rooted union philosophy on which wage policy was based for a long time and which was simply applied again under somewhat extreme circumstances. In a sense, this is

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[26] Far-reaching special rules were applied to eastern Germany anyway because laid off persons in the East had never contributed to the western insurance system during their time of employment.

[27] Of course, this point can hardly be proven in an empirically rigorous manner since it concerns general moods and attitudes in the population, the political elite and the press rather than hard economic facts. However, a glance through the press archives of the Kiel Institute of World Economics on the relevant subject ('wages and collective bargaining') and the relevant time span (1990-1992) confirms the view expressed in the text.

our interpretation of the matter, and we shall elaborate in the following paragraphs how a rough explanatory account along these lines may look like.

(e) Union Philosophy: The Principle of Equal Pay for Equal Work ('PEPEW')

Economically speaking, the basic rationale of unionism is to correct the outcome of (free) labour markets in a way that is perceived as desirable by union members. As to wage setting, the union task falls into two different strands, an aggregate one - concerning the wage level and its growth over time - and a structural one - concerning the wage structure and its change over time. Taking a long-run perspective against the reference system of a completely free labour market, the structural task is probably the more fundamental one: after all, competitive forces will tend to drive up the wage level roughly with the growth of labour productivity, and to the probably large extent that unions' optimal wage policy follows just the trend growth of labour productivity, the presence of unions will not make much of a difference. Of course, unionism may persistently keep the wage level above its equilibrium by exploiting some monopoly market power,[28] but there is no obvious point in assuming that there is a systematic change of this 'monopoly mark-up' over time. Things look different with respect to the wage structure, where market forces do not necessarily pull in the same direction as union preferences: if some structure is considered as 'fair' or in another sense advantageous by the union membership, and if this structure is not established by the market or is disturbed in a market-driven process of revaluation of manpower and human capital, then there may be a persistent or a recurring clash of the union task with market forces, which is not 'accommodated' by any common trend growth.

What matters for our purpose here is the regional element of the wage structure, because the puzzle of East/West-wage equalization is defined

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28 How large this monopoly mark-up happens to be empirically has been the subject of extensive econometric research on American unionism. For a survey of this literature, see Gregg Lewis [1986].

in terms of a regional dimension. Looking over the experience of the last four decades, it is clear that the broad pattern of the regional wage structure has been remarkably stable and undifferentiated in West Germany. This can be seen from Table 4, which depicts the average hourly earnings of an industrial worker in the different German states in ten-year intervals as a share of the West German average (in per cent). All over the four decades, the differentiation was rather small - in the range of a coefficient of variation between 2.7 and 7.1 per cent depending on the year chosen and on whether or not city states are included in the sample. More importantly, the pattern of the inter-state wage structure remained rather constant over time and it barely reacted to specifically regional crises.[29] Taking into account that most of the inter-state variation is likely to be due to differences in the composition of industries - e.g. relatively high-capital intensity industries in Northrhine-Westfalia compared to Bavaria or Schleswig-Holstein - then one has to conclude that the West German economy experienced very little regional wage differentiation and flexibility all along its history.[30] Hence the regional equilibrium structure of wages that survived for so long should be interpreted as deliberately chosen by wage bargaining and thus fully backed by what may be called an egalitarian preference of the relevant industrial unions and the union umbrella organization.

In this sense, it is perfectly legitimate to speak of a long-standing German union philosophy based on a principle of equal pay for equal work ('PEPEW') which means that, whatever different market conditions prevailed in different regions of West Germany, the same type of work should be remunerated with the same wage. Given the regional structure of union organization on the industry level, this principle has of course never been explicitly formulated or made part of a programmatic statement because this would have meant officially denying the independence of the regional bargaining units. Apart from the factual constancy and rigidity of the regional wage structure, the principle can

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29 See Paqué [1991].

30 This picture is roughly confirmed when a different wage variable is used, namely the yearly gross income per employee (Table 4).

Table 4: Regional Wage Level as a Share of West German Average (in per cent)

	1950	1960	1970	1980	1990
(a) Hourly Earnings of Industrial Worker					
non-city states					
Schleswig-Holstein	96	96	96	99	96
Lower Saxony	98	98	101	101	101
Northrhine-Westfalia	103	107	106	102	101
Hesse	104	97	101	101	102
Rhineland-Palatinate	93	91	95	98	99
Saar	.	105	100	101	103
Baden-Württemberg	101*	93	98	100	102
Bavaria	93	87	90	93	94
city states					
Hamburg	117	105	111	113	110
Bremen	107	103	102	103	109
Berlin	.	90	101	99	99
*coefficient of variation***					
- non-city states	4.3	6.5	4.6	2.7	3.0
- all states	7.1	6.7	5.3	4.6	4.5
(b) Yearly Gross Income per Employee					
non-city states					
Schleswig-Holstein	.	96	93	92	91
Lower Saxony	.	94	94	94	93
Northrhine-Westfalia	.	106	106	103	101
Hesse	.	100	104	103	104
Rhineland-Palatinate	.	97	95	98	97
Saar	.	112	100	103	100
Baden-Württemberg	.	99	99	101	103
Bavaria	.	94	93	94	96
city states					
Hamburg	.	110	114	116	117
Bremen	.	109	104	100	100
Berlin	.	95	100	105	103
*coefficient of variation***					
- non-city states	.	5.9	4.8	4.4	4.5
- all states	.	6.5	6.2	6.3	6.6

* 1951

** Standard deviation from unweighted average divided by unweighted average (in per cent).

Source: Own calculations with data from Statistisches Bundesamt, Bevölkerungsstruktur und Wirtschaftskraft (various issues); Gemeinschaftsveröffentlichung der Statistischen Landesämter, Volkswirtschaftliche Gesamtrechnungen der Länder, Heft 9 (1960-76); and data provided by the Statistisches Landesamt Schleswig-Holstein.

only be inferred from the many programmatic union statements against any kind of outsider 'wage dumping' under conditions of locally concentrated economic crises: as any such outsider competition does invariably have a strong regional dimension, the case against it implicitly establishes a case against regional differentiation.

Why did German unions quite strictly adhere to the PEPEW in the past? In our view, it would be rather farfetched to search for a rationality of the PEPEW in the standard model world of wage bargaining, where unions in a sense decide upon the short- or medium-run trade-off between the likelihood of employment and the wage of some representative member. It seems much more reasonable to search for the rationality of the PEPEW in very long-term considerations of political economy and of group ethics. Considerations of political economy creep in as soon as the government can be anticipated by unions to stand ready to take over the responsibility for the equality of living conditions all over the country and to carry out a 'regional policy' that at least partly compensates for the locational disadvantages of a specific region. If the government commitment to such a stance is strong and credible enough, then it is a reasonable strategy for unions to minimize the use of wage moderation as an instrument to improve locational conditions for production and investment in regions hit by crises and to leave the task to the government. Prima facie, this seems to be a quite realistic description of the basic regional policy assignment in West Germany: all over the last four decades, the West German government had a rather strong commitment to the use of instruments of regional policy to improve the locational conditions in backward areas or in regions hit by industrial crises. To some extent, this commitment is even part of the German constitution.[31]

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[31] See the sections on fiscal federalism (article 106-107), which prescribe a redistribution of tax money to equalize living conditions across the country, and the so-called common tasks of the Federal State Government concerning the improvement of the regional economic structure (article 91a). Note, however, that there is no explicit constitutional responsibility for regional policy of the Federal Government so that a federal drawback from regional policy would not constitute an outright violation of the constitutional duties.

As to group ethics, it is perfectly realistic to assume that the vast majority of union members and even of the population at large would subscribe to the moral postulate that an equal type of work should also be paid equally in different locations, even if unemployment rates differ. In fact, the PEPEW is so widely accepted as an abstract principle that there has never really been a controversial discussion of it in the public.[32] Hence it is reasonable to interpret German unions as 'insurance agencies' that, among other things, guaranty a 'fair' treatment of labour across the country by making the same conditions of remuneration to prevail everywhere. Of course, this does not mean that, under circumstances of high regional unemployment, an individual unemployed person may not be ready to work for conditions that he/she considers to be unfair on moral grounds, simply because his/her personal destiny is even more important to him/her than keeping up an accepted abstract principle. However, it means, that ex ante, i.e. behind a kind of Rawlsian veil of ignorance[33] where he/she did not know his/her future position in the labour market, he/she would prefer the PEPEW to prevail.

It is against this background of strong government commitment to regional policy and an ethical consensus on the matter of equal pay for equal work in different regions that the events following German unification should be interpreted. In this light, unification did not mean more than a redefinition of the geographical bounderies of the country in which the PEPEW applies between regions; any deviation from the PEPEW was regarded as an unusual and unsustainable state of affairs that had to be corrected in due course. In a way, the burden of proof is thus turned upside down: the sharp eastern wage increases are not any more the extraordinary consequence to be explained by peculiar historical circumstances, but rather the logical implication of a long-standing practice of ensuring equal pay for equal work and of assigning the

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32 Remarkably enough, the issue of interregional wage equality does hardly receive any attention in a recent union-edited history of unionism in Germany (Hemmer, Schmitz [1990]). In our view, this simply shows that PEPEW has become a fact of life, which is taken for granted rather than discussed controversially or preserved as an important item on the union agenda for the future.

33 See Rawls [1971].

responsibility to the government to carry out a compensatory regional policy. As long as this practice was not questioned in principle, there is no point in expecting anything else than a fast East/West-wage equalization. Given the vast subsidization of the East right from the start after unification, the unions had every reason to assume that the government stood ready to carry out a large - in fact, a gigantic - 'regional' programme to support investment in the new eastern states. Hence there was really no powerful counterveiling force which could have driven unions to rethink their philosophy.

It is important to recognize that the actual union wage policy defies any simple categorization as rational or non-rational in the sense of some constrained optimization. Given the very high uncertainty about the future economic developments, unions opted for preserving their role as a guarantor of the PEPEW into the future. By doing so quickly and decisively, they could create early facts and thus avoid to be drawn into a quagmire of regional labour market responsibilities that might have endangered their traditionally unambiguous egalitarian position. On the other hand, they risked to worsen the regional labour market plight beyond the point that the public would see it as a sole responsibility of the government, and thus undermine their own position in the long run. A similar combination of pros and cons of this strategy applies to the support of the union members. On the positive side, unions could expect to be seen as unyielding supporters of a widely accepted ethical principle that, viewed from the perspective of western members, helped to suppress 'unfair wage dumping'. On the negative side, the personal interests of union members in the East were brushed aside: while they shared the basic moral belief in the PEPEW,[34] they were ready to trade off this job security against the realization of an abstract principle.[35] By sacrificing a large number of union jobs in the East, the uncompromizing wage policy could be seen as undermining union dominance in at least

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[34] See the results of opinion polls carried out by Akerlof et al. [1991], which point to a majority of eastern employees regarding the payment of a lower wage in the East for the same work by the same company as a form of exploitation,

[35] See again the opinion polls by Akerlof et al. [1991].

part of the united country. At any rate, a difficult conflict for unions between holding up important principles and risking to overdo the case by overstretching government responsibilities and undermining the membership base is clearly visible.

To sum up, the rapid wage push in eastern Germany after economic unification should be viewed first of all as the natural consequence of the interregional egalitariarism that collective agreements used to impose on the wage structure all over the last four decades. In being confronted with a regional crisis of so far unknown dimensions - both with respect to the size of the area and the restructuring requirements for industry - unions chose a strategy of 'business as usual' so as to underline their traditional role as guarantors of fairness principles and the government's role as a source of regional support for investment. Sticking to this strategy was made very attractive in the short run by the historically unique circumstances of unification, notably the social end-game situation resulting from imposing standard western welfare state rules onto the new eastern states that started at much lower wage levels. However, the driving force of the process is to be located in the traditional structural rigidity of German-style corporatism.

II. A Normative Economic Case for East/West-Wage Equalization?

Prima facie, the vastly different unemployment rates in western and eastern Germany speak for a substantial wage differentiation between the two parts of the united country. In essence, it is the case of an industrial crisis which has not been accommodated by a sufficient sectoral wage moderation in the short and medium run and which has thus turned into a long-term regional labour market disequilibrium, i.e. into a rise of the natural rate of unemployment in the region previously hit by the crisis. Given an insufficient mobility of the unemployed labour force, a regional wage differentiation can help to make investment in the respective region profitable enough to close the 'regional capital gap' in the long run.[36]

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[36] For a more detailed account of the case for regional wage flexibility, see Paqué [1991].

In terms of normative economics, there are basically two strands of argument that have been put forward against a long-term wage differentiation between East and West. Both point to the detrimental effects of such a differentiation on the long-term growth dynamics of the eastern German economy. In doing so, however, they focus on different issues, namely (a) the need to mitigate East/West-migration to avoid a drain on the resources of the eastern economy, and (b) the need to steer structural change in the direction of industries with a high labour productivity, which is due either to a high physical capital- or a high human capital-intensity of production. We shall critically evaluate these two arguments in the following paragraphs.

(a) Meeting the Migration Threat

It is a popular view in the public that a massive East/West-migration in the coming years would deprive the East German economy of its most important long-term asset, namely a relatively well-qualified workforce, and thus impede its future growth prospects. To prevent this from happening, a rapid wage equalization is warranted.

In our opinion, this view is mistaken for essentially two reasons. First, by identifiying the wage differential and not the difference in expected incomes as the main empirically relevant motive for migration decisions, it neglects the incipient rise of migration that is likely to result from the rise of unemployment in the East as a consequence of wage equalization.[37] Second, by pleading for an across-the-bord wage equalization, it misses the superior option of a market-driven wage equalization in those labour market segments where scarcities actually emerge. E.g., highly skilled workers may be paid supercontractual premia so as to prevent them from moving to the West. Hence, if anything, there is a case for a wage stratification between scarce (mostly skilled) and abundant (mostly unskilled) labour in the East, with the scarce part reaching western wage levels or even beyond (given the better living conditions in the West!), and the abundant part lagging

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37 See Section I.3.(b) above.

well behind. Such a policy of wage stratification would preserve the eastern locational advantage of low-cost manpower and at the same time prevent the outmigration of the complementary human capital. Compared to this, a strategy of minimizing all kinds of East/-West-migration irrespective of the labour market segment appears to be quite obviously suboptimal on welfare economic grounds. Only if one introduces further restrictions of fairness on the interpersonal wage differentiation within the East - e.g. between skilled and unskilled workers - might an East/West-wage equalization be justified as a second-best solution to mitigate migration (if it were effective which it is probably not because expected income diffeerentials, not wage differentials matter!). Then, however, the real rationale for wage equalization is to be found in considerations outside normative economics.[38]

(b) Steering Structural Change

Among economists, the most common case against an East/West-wage differentiation is based on the view that it would drive the eastern German economy into a pattern of specialization with a higher labour intensity of production and thus, at any given level of technological knowledge in the united country, a lower labour productivity than the western German economy. This prospect is judged to be undesirable because the historical pattern of structural change has shown and the future pattern is likely to show further that, in highly developed Central Europe, there is no place for labour intensive production lines, mainly because the growth potential lies in branches that produce with a relatively high intensity of physical and/or of human capital, but not of

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38 Burda, Wyplosz [1992] show within a model of the new growth theory (e.g. in the spirit of Lucas [1988]) that an East/West-migration of the skilled workforce could be desirable if only the extent of human capital externalities is larger in the West than in the East due to, say, agglomeration effects. While their basic point is valid, their analysis starts from a policy-irrelevant framework of maximizing the present and future output of East and West taken together. Thus, within their model, massive migration flows of skilled labour from the East to the West are not excluded a priori: a complete depopulation is within the range of feasible and potentially desirable policy outcomes, partly even calling for the subsidization of migration from the East to the West. For a more detailed critique, see Paqué [1992].

manpower. This is why the course should be set early on in the direction of the inevitable so as to avoid an untimely obsolescence of the newly installed capital stock and a poor growth performance of young eastern industries.[39]

To evaluate this line of reasoning, we shall assume a simple model economy with two geographically distinct regions ('West' and 'East'), two homogenous factors of production (capital and labour) and a possibly large number of sectors of economic activity ('branches') that are characterized in the West by a large array of different capital intensities and wage levels. Let us then assume that the old capital stock of the East is completely obsolete for whatever reason so that the long-term equilibrium structure of the eastern economy will solely depend on future investments. Let us further assume that the prospective wage level in the East is only a fraction - say, 2/3 - of the western level, but with the same intersectoral wage structure between 'high'- and 'low'-capital intensity sectors; hence, basically, labour in the East is simply devalued across the board.

Within this setting, there are three channels through which the East will end up with a high labour intensity of production. First, branches with a high labour intensity of production will profit disproportionately from the low labour costs in the East, and they will have the strongest incentive to choose the East as a future location for investment and production ('branch selection effect'). There may even emerge altogether new branches in the East (e.g. in low-productivity services) that could not profitably produce in the West at the prevailing wage level. Second, in any single branch with a production technology that allows for a substitution of labour for capital, firms will have an incentive to move to higher labour intensities in the East than in the West, even without switching technologies ('factor substitution effect'). Third, independent of the production technology (whether substitutional or fixed

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39 An authorative statement of this kind can be found in Sachverständigenrat [1991/1992], §§ 538-542, notably § 539 with respect to the consequences of wage subsidies.

coefficient), firms will tend to use technologies in the East that make a more intensive use of the factor labour ('technology switch effect').

On the normative grounds of a future static efficiency of the allocation between eastern and western Germany, it is very hard to argue against any of these effects. After all, the East has a stock of underemployed labour that the West does *not* have, and it would be completely arbitrary to take the western standard of labour intensity as anything like a relevant normative yardstick for the prospective eastern one. Economically, eastern Germany is simply to be treated like another country whose equilibrium wage level at the given migration propensity of the population happens to be below the western German one. To be sure, there have not been in the past any serious calls for a sharp rise of the labour costs in, say, Austria, Belgium, Britain or Holland up to the western German level so as to remove the 'distortions' in these economies. Although firms in these countries produce for roughly the same international goods markets as West German firms, there is apparently a different equilibrium structure of production, factor use and technology application that cannot sensibly be criticized as inefficient only because it takes account of the specific national, regional or local conditions of the labour market. Without introducing non-economic considerations and restrictions, the same is to apply to the eastern German industrial structure once it will have developed on the basis of a wage level that is persistently lower than the West German one.

Note that the same conclusions apply even if one thinks of labour not being a homogenous production factor that is abundant, but of different types of labour ('skilled' versus 'unskilled') with different degrees of scarcity due to different labour market options in case of migration to the West. If the future eastern German industry would tend to produce with a relatively low intensity of physical capital and skilled labour for the three reasons given above, this would have to be considered as an efficient reaction to genuine scarcities, not as a distortion away from the 'appropriate' factor proportions given in the West.

On the grounds of dynamic efficiency, it is widely believed that a higher labour intensity of production would deteriorate growth prospects for the eastern economy in the long run so that the prospect of convergence of per capita incomes between East and West would be further postponed into the future. To evaluate this argument, it is convenient to distinguish between two variants of it, the physical capital- and the human capital-version. The former interprets high labour intensity as meaning a relatively low average ratio of physical capital to labour, the latter takes it to mean above all a low human capital intensity of production, i.e. roughly speaking, a low ratio of skilled to unskilled labour.

The physical capital-version of the argument is quite obviously unconvincing. To see this, let us again distinguish the three different effects that lead to a lower aggregate capital intensity: branch selection, factor substitution, and technology switching. As to branch selection, the empirical picture of the past does not confirm the view that branches with higher capital intensities of production are the ones which tend to grow faster. If anything, the reverse holds: most of the sunset industries of the 1970s and 1980s in West Germany - notably iron and steel, mining, shipbuilding etc. - are branches which produce with a high capital intensity and a high physical labour productivity and which tranditionally pay relatively high wages. As a consequence, the geographical growth centers have typically not been regions where these high wage-industries are concentrated - say, Northrhine-Westfalia, the Saar, the northern coastal shore - but rather those areas like Southern Bavaria, Baden-Württemberg or Hesse where other industrial or service activities are located. Of course, it is very hard to make a forecast whether this trend will continue in the future because this would require a more or less accurate prediction of the sectoral incidence of the supply side shocks to come. However, it appears to be plausible to assume that producers in newly industrialized countries and increasingly also in developing countries will be able to compete in those high-capital intensity production lines that use standard technologies.[40]

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40 This has been a long-standing prediction of 'structural reports' of the German economic research institutes. See, e.g., Donges, Schmidt et al. [1988].

As far as the factor substitution effect is concerned, the argument has hardly any basis at all: the mere profitable employment of some more lower-paid workers at the same capital stock and level of technology at any point in time does not give any reason for a change of the long-term productivity growth prospects. An analogous case can be made with respect to technology switching: if the use of a more labour intensive technology becomes profitable precisely because labour is relatively abundant, this has no identifyable implications for the future growth of the respective branch.[41]

The human capital-version of the argument is the much more interesting one and it deserves some closer examination. Empirically, there is substantial evidence that those sectors which produce with a high intensity of human capital, had a better growth performance than the average in the last two decades in West Germany; and, as in the case of high physical capital intensity, there is hardly any reason why the future path of structural change should be different in this respect.[42] The normative consequences of this likely prospect for an East/West-wage

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41 All this seems so obvious that the question arises why, in the public and in the political discussion, the link between (physical) capital intensity and the growth prospects seems to be taken for granted. Probably, there are two major reasons for this. First, observers tend to confuse the ever present trend towards capital intensification in the growth process with the choice of an appropriate capital intensity as a starting-point of this process. Clearly, economies may have very different average capital intensities, but they may all more or less go through the same process of capital intensification over time in all relevant branches of economic activity. The question at hand is clearly one to fit the eastern German economy into the right slot of capital intensity, with no apparent implication for the future performance in the growth race. To put it bluntly, the question is whether eastern Germany should follow the 'example' of western Germany or of another European country with somewhat lower value added per working hour in its economy (say, Austria, Belgium, Britain). Second, observers tend to somehow 'define' the labour abundance in eastern Germany as a strictly temporary phenomenon so that any pattern of specialization which reduces this abundance is almost by definition wrong-headed. Such a view simply assumes that there are other feasible and possibly superior ways to reach full empoloyment than via a lower wage in the East. We shall return to this matter below in the text when evaluating the current set of policy measures to support the eastern German economy.

42 See again Donges, Schmidt et al. [1988].

differentiation in Germany crucially depend on the types of labour in question: if the wage differentiation is uniform for both skilled labour (as a proxy for human capital) and unskilled labour (as a proxy for pure manpower), the relative price of human capital to manpower will be the same in both parts of the country so that no distortion of factor use in favour of manpower should be expected in the East. However, to the extent that the East/West-differentiation is more pronounced for unskilled than for skilled labour, which may have better prospects of employment in the West, then some such distortion will come about. It is an open empirical question to which human capital intensity the economy will converge, because future migration flows and threats are very hard to predict. A rough guess is that human capital will be somewhat scarcer in the East than manpower, but that - for a long time to come - there will remain a large-scale unemployment of *both* skilled and unskilled labour. Hence the resulting downward bias of human capital intensity and the concomitant loss of growth potential may not be all that dramatic.

Even if one were ready to accept the rationale for a corrective measure to raise the future human-capital intensity of production in the East, a 'policy' of general rapid East/West-wage equalization would hardly be a first-best solution. In fact, if the policy aim were, roughly speaking, to reach full employment of both skilled and unskilled labour and a maximum speed of income convergence through essentially market-driven growth processes between West and East, a policy of preserving a market-determined East/West-wage differential for unskilled labour and paying wage subsidies for skilled labour that just neutralized the market-determined wage differential between the two types of labour, would be preferable to an East/West-wage equalization across the board.

Up to this point, we interpreted the human capital version of the argument as concerning the future pattern of specialization at a given supply of manpower and human capital. There is another strand of thought based on ideas of endogenous growth theory,[43] which focuses on the role of a high-wage level as a device to raise the profitability of

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[43] Notably Lucas [1988] and Sala-i-Martin [1990].

investment in human capital.[44] The rationale of this argument is very simple: within a standard model of optimization of human capital investment by a representative individual household, it can be shown that - ceteris paribus - a higher wage involves a higher shadow value of human capital, which, in turn, makes for a greater incentive to invest time in costly training, both on the job and in unemployment. Hence, while a wage rise increases unemployment in the short and medium run through the standard labour demand effects,[45] the greater incentive for human capital investment accelerates human capital formation and thus labour productivity growth. Under a set of additional assumptions, the model implies that a large part of an original wage increase thus 'validates itself' in the subsequent endogenous improvement of labour productivity.

Without going into any details of this model type, there are some major objections to its use as a standard of judgement and policy guide in the case of eastern Germany or any other economy in a similar constellation. First, the theory does not make an explicit distinction between training on the job and training in unemployment, at least not in the form presented by Burda, Funke [1992b]. In fact, it is assumed that both kinds of training incur the same training costs and lead to the same productivity enhancing effects, which is probably quite unrealistic. Instead, it is likely, that, for many industrial jobs, training on-the-job is the much more effective method to acquire skills than some publicly financed requalification programmes that cannot be targeted precisely enough at the future labour market needs. While appropriate model variations to take account of this difference may be technically feasible, they would somehow run counter to the whole philosophy of the approach: after all, the more the process of training presupposes the state of employment in the first place, the less the idea of a positive long-run effect of the wage increase on growth as put against the negative short-run effect on employment can be upheld.

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[44] See Burda, Funke [1992b].

[45] In the model of Burda, Funke [1992b], it is assumed that employment is labour demand constrained in the relevant range.

Second, it is doubtful whether the state of human capital is really anything close to a relevant constraint on employment and growth in present-day eastern Germany. Sure enough, there is a widespread consensus among economists that the eastern German labour force has in general a rather high level of qualification: in terms of formal education, it is not much worse than the labour force in the West, and the still existing gap in expertise with modern technical equipment is perceived to be relatively small. What matters for future employment and growth are apparently much more the general locational conditions than a lack of human capital, which makes the situation of eastern Germany quite different from that of a developing or a newly industrialized country.[46]

Third, if human capital became a constraint in eastern Germany in a free market wage regime with a relatively low wage level, then a market-determined wage differentiation between skilled and unskilled labour may do the job of providing the required retraining incentives. Beyond that, there is no need for a general rise of wages; in fact, the wage differentiation is preferable to the (probably large) extent that training-on-the-job is the more effective and cheaper method of human capital accumulation than requalification in unemployment (see above).

Finally, while theoretically sound in terms of abstract optimization, the argument lacks an empirical fixpoint which could give at least a clue, where the appropriate wage level could be located to initiate an intertemporally optimal growth process. To put the problem in the form of a straight policy question: how far is one to deviate from the traditional fixpoint of full employment to speed up human capital formation? On intuitive grounds, an argument of this kind might possibly justify a surpassing of the full employment benchmark by, say, up to 5 per cent of the labour force for a few years; the dimensions of eastern

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[46] Burda, Funke [1992b] quote the case of Singapore in the 1980s as an example for a human capital oriented policy via high wages. For different accounts of the Singapore experience, see Fischer, Spinanger [1986], Suhr [1989] and Chadha [1991].

German unemployment (around 30 per cent), however, appear to be well beyond the plausible scope for any such policy advice.[47]

All in all, the argument for speeding up human capital accumulation through an agressive wage policy looks rather farfetched when applied to the actual case of eastern Germany. It appears to be a mere ad-hoc rationalization of an observed development, which would never have been recommended as sensible policy in the first place. Remarkably enough, no such policy has been proposed for the economy of the Czech Republic, which, in many respects, started off from very similar conditions in terms of factor endowment and industrial structure as eastern Germany.[48]

In a more general sense, the aura of ad-hoc rationalization of an observed fact surrounds all normative economic cases for a rapid inner-German East/West-wage equalization, simply because the very fact to be justified is so obviously dependent on the legalistic, not the economic preconditions created by the nation state: if history had taken a different turn after the iron curtain had come down and the two Germanies had remained separate nation states with market economies - say, with free goods and factor mobility between them within the European Community - it is very hard to imagine that any economist would have recommended to equalize the wage levels between the two Germanies as soon as possible, be it on the grounds of 'excessive' migration or of the future path of structural change. After all, there has never really been a serious discussion on abruptly raising the wage levels in, say, Austria, Belgium, the Netherlands or the United Kingdom or, more recently, the post-socialist eastern European countries to the high (western) German level. If this is so, however, then one may well ask, whether in the last resort all normative economic considerations are

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47 This is why the often-made reference to wage policy in Singapore in the 1980s as an example for this kind of policy is misleading. After all, Singapore had never to cope with unemployment levels in the range of the eastern German labour market.

48 For a comparison of the two cases, see Burda [1991].

no more than instruments to give some moral or legal considerations an intellectually attractive underpinning.

III. The Long-term Consequences of East/West-Wage Equalization

For a number of reasons, it is very hard to make a sensible prediction or even guess of the long-term consequences of East/West-wage equalization for the labour market in Germany, both in the eastern and in the western part of the country. First, despite the analytical parallels to previous experiences in the West, the sheer extent of the adjustment crisis in the East makes anything beyond the drawing of some vague analogies and comparisons look extremely speculative. Second, the time span in which the eastern German economy could be observed working under essentially market conditions is very short by any standard of statistical inference, at least as far as the identification of fundamental long-term forces is concerned. Hence any form of extrapolation of trends based on whatever constant parameters appears to be excluded from the start. Third, given the vast extent of public subsidization of the East through various channels, the final outcome of the transformation process will be highly conditional on whether government policy will remain essentially unchanged or whether public aid will be turned back and/or adjusted in structure in due course.

For these reasons, all what is said in this section will have to be regarded as no more than a conditional scenario on the general course or direction in which the German labour market is likely to turn provided that the general policy setting remains stable or changes in the way indicated. To have a suitable starting-point for this speculative type of analysis, we shall first stake out how the present policy framework looks like.

With economic and political unification, the German government initiated a vast array of programmes to support the transformation of the eastern German economy from a command to a market system. Roughly speaking, the policy package consisted of four items, namely (i) large-scale liquidity grants to loss-making firms, notably to the state-owned Treuhand-companies, (ii) heavy public investments in the physical, legal and administrative infrastructure of the East, (iii) the extensive use of labour market programmes, above all work creation and requalification measures, and (iv) the massive subsidization of private investment in the East in the form of investment bonuses, special depreciation allowances and cheap credit facilities.[49]

In a longer-run perspective, the first three items are very unlikely to play any major and persistent role, either because they are by their very nature short-term emergency measures or because their rationale will disappear anyway.

Liquidity grants are obviously emergency measures to prevent the large-scale closing down of loss-making public firms in the interim period until privatization takes place. The original political intention was to cut off liquidity aid as soon as the bulk of privatization was completed, which should be the case by the mid-1990s at the latest. Despite the actually high privatization speed of the Treuhand, it looks by now very likely that a non-negligible share of unsaleable industrial capacity will remain subsidized for a long time, maybe in the form of state holding companies, which will be publicly funded to prevent a complete destruction of so-called industrial core regions. In many respects, this will resemble the persistent subsidization of sunset branches like coal mining and agriculture in the West, and it will create considerable fiscal problems for the public budgets.[50] However, given the already dramatic shrinkage of employment in eastern industry up to now, it will probably not affect the general development of the labour market to any substantial degree - apart from adding a certain amount of hidden unemployment to the empirical picture.

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[49] For a survey of the main investment aid programmes, see Deutsches Institut für Wirtschaftsforschung, Berlin, Institut für Weltwirtschaft an der Universität Kiel [1991b], pp. 30-31. A regular stocktaking of the state of the eastern economy and of the various policy measures is provided by Deutsches Institut für Wirtschaftsforschung, Berlin, Institut für Weltwirtschaft an der Universität Kiel, see [1991a, b, c, d; 1992a, b, c; 1993].

[50] See Paqué, Soltwedel et al., [1993], pp. 40-43.

Public infrastructure investments and labour market programmes have in common that they aim at improving the locational conditions for private investment in the East by improving the quality of the complementary factor supply, namely the public capital stock and the labour force. Given the present massive use of these instruments, it is likely that, in a few years' time, they will simply loose their rationale because the major visible East/West-gaps in public capital stocks and the level of training and education of the labour force will be all but closed.[51]

For these reasons, it appears to be quite likely that the most pervasive and persistent instrument to be used in the long run will be the subsidization of private investment in the East to compensate for whatever locational disadvantages remain in the future at basically minimum wage parity between East and West. At present, a rough guess is that, on average, the rate of subsidization for any D-Mark invested in eastern Germany is around 30 per cent.[52] As it is hard to imagine a market economy to subsidize investment in roughly 1/4 of its territory at such a high rate over a longer period of time, one may think of this 30 per cent as a higher benchmark for the future. Whatever the actual rate may be, however, investment subsidization will probably remain the most important single aid instrument simply because it is a classical means to neutralize those locational disadvantages which cannot easily be removed because they are either nature-given (such as geographical location) or simply not known with any degree of precision (such as the lack of agglomeration externalities which typically accrue in established regional growth centers, but do not emerge outside of them). Therefore,

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51 Note that, in the realm of labour market programmes, this holds above all for (re-)qualification schemes and to a lesser extent for work creation measures (provided they have a positive effect on the quality of the workforce, e.g. by keeping up motivation and work skills). It does not hold for mere rationing devices such as early retirement schemes, which have more the character of emergency measures to remove a part of the labour supply from the market according to whatever criteria. The heavy use of such-like rationing in eastern Germany in the last two years will hardly be repeatable in the future simply because there is not much scope left for a further rejuvenation of the labour force.

52 Private conversation with Klaus-Dieter Schmidt, Kiel Institute of World Economics.

it seems to be quite realistic to assume that a generous package of programmes of investment aid for the East will survive, maybe coupled with some more marginal labour market programmes and public investment projects. What will then the future of the East German labour market look like?

Disregarding for the moment the impact of massive subsidization of private investment in the East, the long-term consequences of rapid East/West-wage equalization for the eastern labour market are likely to be qualitatively similar to the labour market dualization observed after the severe industrial crises in the West, notably in the Ruhr and the Saar area. The outcome will probably be a stock of long-term unemployed persons - among them a disproportionate share of former industrial workers and persons with structural handicaps such as age, poor health, or to some extent lack of occupational training. They will find themselves in basically the same situation as western ones in the aftermath of the crises 1974/75 and 1981/83 and possibly also in the future after the recession 1992/93: with the post-socialist shrinking of industry being irreversible due to the high level of industrial wages in the East, the labour surplus would have to be absorbed by other sectors of the eastern economy, notably by the private service sector. However, jobs in the 'professional' part of the service sector - banking, insurance, consulting etc. - are beyond the level and structure of skills of basically industrial workers. Only low-productivity and low-wage service sectors are genuine alternatives for them. Again, however, a ratchet effect of the unemployment benefit system then comes into play, though in a slightly different way than traditionally in the West. There, it was above all the linkage between (open-)ended unemployment benefits and the 'historical' value of the industrial workers' human capital as expressed by the actual earnings received before the lay-off that made unemployed persons reluctant to accept significantly lower paid jobs. In other words: by the very fact of de-industrialization, industrial workers' human capital was devalued down to the level of their alternative employment under market conditions. Today, in eastern Germany, the situation is typically different in the sense that the lay-offs take place in a kind of social end-game situation as described above: due to the extremely rapid rise of the eastern wage level, most industrial workers still earn substantially lower wages at the time of the lay-off than they might earn in a low-productivity service job at a later time of reentering employment. Nevertheless, as unemployment benefits are regularly adjusted upwards according to the rate of increase of old-age insurance benefits, which in turn are more or less indexed to the level of net wages, the 'gap' between the wage in an industrial and in a low-productivity service job does not necessarily shrink over time. In fact, this gap is likely to have remained more or less constant in eastern Germany since both the net wage and old-age pensions so far grew at about the same rate since unification - reaching 60 to 70 per cent of the western level by the end of 1992.

By and large, this is again the picture of a dual labour market that will emerge in the East in the 1990s just as it did in the West in the course of the later 1970s and 1980s, with a high-productivity industry which is too small to absorb the former industrial labour, and large-scale structural long-term unemployment. In quantitative terms, however, the situation will be much more dramatic than ever in the West. Given the post-crisis levels of unemployment to start from about 1/3 of the labour force, the eventual equilibrium levels of unemployment to which the eastern economy will converge are likely to be well above 20 per cent, depending on the particular regions in question, with the southern states having somewhat better locational conditions than the northern ones.

Taking now into account the likely impact of massive subsidization of investment in the East, the picture described above must be adjusted in two qualitative respects. First, the level of unemployment will be somewhat lower: whatever they do else, investment subsidies that are basically financed by western taxpayers' money will raise the rate of return to capital in the East and thus redirect investment from the West to the East as well as incite capital formation in the East itself. Other things being equal, this will create additional employment and thus mitigate the labour market problems. To what extent this will be the case is an empirical question that can hardly be answered at present. It all crucially depends on how serious the remaining disadvantages of the East as a location for industry happen to be in the future compared to the subsidization offered. Given the rather disappointing investment record in the East so far, there is reason to be sceptical in this respect.

Second, the dualization of the labour market will be further accentuated by the type of aid, which involves a constant rate of subsidization for any D-Mark invested, but a rate of subsidization per job created that declines with the capital intensity of production. Hence, capital intensive lines of production will profit disproportionally from the subsidization - thus leading on average to a higher capital intensity of production via the three effects ('branch selection', 'factor substitution', 'technology switch') that have been described in an analogous situation, but under opposite signs above. Again, the likely effect is impossible to quantify, but at the prevailing high rates of subsidization (around 30 per cent), it may be quite substantial. Note that, unlike the 'bias' towards labour intensity in case of a long-term East/West-wage differential, the capital intensification as a *consequence* of investment subsidies must be viewed as a genuine allocative distortion because, in terms of factor intensities in the East, it drives structural change into precisely the direction that is not warranted by the prevailing factor endowments.

All in all, eastern Germany will thus experience a replay of the dual economy that emerged in the western regions where the sunset industries of the 1970s and 1980s were concentrated. Due to the sheer extent of the de-industrialization and the type of the subsequent investment aid, however, the dualization will be much more pronounced than formerly in the West. Whereas, even in the worst-hit western areas, the equilibrium unemployment rate never surpassed 15-20 per cent, it may well remain in the range of 25-30 per cent in the East.

Taking a very long-run view, such dimensions of persistent unemployment in a substantial part of the united German economy, which covers roughly 1/5 of the whole labour force, may have quite revolutionary feed-back effects on the viability of long-standing institutions of collective bargaining. On a very speculative level, one may doubt whether collective wage agreements that are factually (not necessarily legally) binding for all market participants can survive at equilibrium unemployment rates of 25-35 per cent.

The rationale for these doubts lies in a rough comparison of the power of outsider competition between the West German situation in the wake of industrial crises in the 1970s and the 1980s and the eastern German one in the future. In western Germany, outsider competition for jobs always remained a fringe phenomenon: after an industrial crisis had run its course, most workers were rather easily reintegrated so that the remaining pool of unemployed persons was of rather bad quality because a large part of this pool consisted of structurally handicapped workers. Therefore, it was hardly a promising option for existing firms to leave their respective employers' associations and risk discontent and demotivation within the insider workforce only to tap the marginal pool of unemployed persons. Similarly, newly founded industrial firms that were to build up a high-quality workforce, could not simply by-pass the insider workforce of the economy as represented in collective bargaining by unions and employ just outsiders at subcontractual levels. Thus even without a watertight legal enforcement of contractual terms for outsiders - after all, the weapon of declaring collective agreements generally binding was rarely used - the institution of collective bargaining proved basically stable, despite less than full employment. In a way, it was precisely the strong structural element in unemployment, i. e. the relatively high share of how ever structurally handicapped persons, that stabilized the system by backing unions' bargaining position as representatives of insider interests.

In eastern Germany, the situation is likely to be the same in the basic genesis of persistent unemployment, but not in its extent and therefore probably also not in its structural characteristics. At rates of unemployment in the range of 30 per cent, the share of structurally handicapped persons (high age, impaired health, lack of qualification etc.) will be much lower and thus the remaining pool of high-quality unemployed persons much larger than it ever was in the West. For firms, this will make for a very high opportunity cost of membership in an employers' association: being organized will mean foregoing all advantages of tapping the high-quality pool of unemployed persons which, in many regions, may be large enough to simply by-pass unions altogether without jeopardizing the prospect for building up a high-quality workforce on the plant level. While it is, of course, pure speculation to name a threshold level of unemployment above which a collective bargaining system may become unattractive for industrial employers, jobless rates of 25-30 per cent should be well above any such level.

Thus, through the backdoor of outsider competition, the traditional German-style bargaining system may be threatened in the long run.

If such a threat becomes visible in the future, it is of course an open question how the Federal Government will react to any calls for broadening the basis of application for contractual terms. Within the prevailing legal framework,[53] declaring an agreement generally binding might even become close to impossible in legal and political practice: legally, the requirement that 50 per cent of all employees in the respective branch and region must be employed by contractually-bound firms, may become difficult to meet because many new firms in the East may stay out of employers' associations in the first place so that the density rate of organization may be very low from the start; politically, a Federal Government facing unemployment rates of 25-30 per cent in the East may be quite reluctant to make any regulatory moves that might endanger a long-awaited recovery in the eastern labour market.

In the very long run, a gradual undermining of traditional corporatist institutions in the East is quite likely to have feed-back effects on the West as well: with collective bargaining becoming less relevant in the East, the subcontractual competition may just as well spill over to the West through the standard channels of substitution. Thus, in the end, collective bargaining may become a fringe phenomenon in the whole of Germany, with the regional wage structure and the wage level gradually making its way towards equilibrium. Of course, all this is speculation, but in view of the dramatic dimension of the labour market plight in the East, it seems to be not implausible. Given the general trend to more flexible working arrangements, which is closely connected to the structural change away from smokestack to modern industries and from industry to services,[54] the development in the East might give a final blow to the power of unions and employers' associations.

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53 For details of this framework, see Paqué [1993].

54 See Paqué, Soltwedel et al. [1993], pp. 52-55.

IV. Policy Alternatives to Wage Differentiation?

It has been argued above[55] that the unemployment gap between eastern and western Germany calls for a wage differentiation to allow for an appropriate East/West-gap in labour costs, which sets in motion various mechanisms to bring the eastern labour market back into equilibrium. Standard counterarguments were discussed and rejected at that point. From the policy standpoint developed above, it should be immediately clear that any measures to achieve such a labour cost differential by whatever policy instrument is likely to be preferable in its long-run labour market effect to the present system of almost exclusive capital subidization that fosters a dualization of the eastern economy into a modern capital-intensive segment paying high wages on one side and a stock of long-term unemployed persons on the other. In the actual policy debate, there have been two major strands of reform proposals of this kind that deserve closer examination, namely (a) the introduction of employment subsidies, and (b) the substitution of 'investment wages' for 'cash wages'. We shall subsequently discuss these non-exclusive policy instruments with a particular view on whether they could help to prevent or at least to alleviate the expected dualization tendencies.

(a) Employment Subsidies

The payment of public employment subsidies to firms in the East is the most obvious and plausible means to preserve an East/West-labour cost gap without a wage differentiation itself. Technically, it could be arranged by reimbursing each firm in the East for a fixed percentage (say, 30 per cent) of the per-hour contractual minimum wage that equals the western level. By creating a positive wedge between the eastern consumption wage and the eastern production wage, consumption wages could be equalized between East and West which may minimize migration incentives[56] while at the same time eastern labour costs for firms could

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[55] See Section II of this paper.

[56] Remember that we do not regard migration pressures as an important rationale for East/West-wage equalization. However, to the extent that ...

remain lower than the ones in the West. Assuming further that the subsidies were financed in a lump-sum manner, their impact on the labour market is analytically the same as that of an East/West-wage differentiation of 30 per cent (measured as a share of the western wage) because, in both cases, labour costs are 30 per cent lower in the East than in the West.

There are basically three strands of arguments that have been made against employment subsidies in eastern Germany. They focus on [i] the impact on structural change, [ii] various issues of practicability, and [iii] the moral hazard effect on future collective wage bargaining. All these strands have been most forcefully brought forward by the German Council of Economic Experts in its most recent reports.[57] We shall briefly discuss them in the subsequent paragraphs.

Ad [i]. As against interregional wage differentiation - and with the same reasoning - it has been pointed out against employment subsidies that they would steer the economy into a too labour intensive path of structural change. In a similar vein, it has been argued that employment subsidies would have the negative side effect of keeping an obsolete capital stock from socialist times in operation and thus retard the process of post-socialist transformation to market conditions.

As to the wrong-headed steering of structural change, all arguments in favour of regional wage differentiation that have been advanced above[58] equally apply to an employment subsidy that successfully mimics the required East/West-wage differentiation (which may be difficult due to practical reasons to be dealt with under [iii] below). In fact, those observers who make a case against employment subsidies on these grounds usually start from the premise that there will be the same wage level in West and East in the very long run so that any employment

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they are, wage subsidies would be an appropriate instrument to remove them.

[57] See Sachverständigenrat 1991/92, §§ 538-542 and 1992/93, § 297.

[58] See Section II. of this paper.

subsidization in the East does almost by definition amount to an interregional factor price distortion in a dynamic sense. As has been argued above,[59] we do not accept this premise, but rather take it as a natural consequence of the vast unemployment gap between East and West that there must be some such long-term differentiation. In the same vein, we cannot reject the concept of employment subsidies on the grounds that it distorts structural change; we rather regard it as an appropriate correction of an otherwise distorted development towards 'too capital-intensive' industries.

As to the preservation of an obsolete capital stock, there are two lines of defence for employment subsidies, a theoretical and an empirical one. On theoretical grounds, it is hard to see why the mere physical age of a capital stock should per se have any economic relevance for its obsolescence: whenever an employment subsidy that mimics a market wage differentiation prevents a part of the old capital stock from becoming obsolete or at least gives it a chance to be profitably restructured by a private investor, there is no point any more of categorizing this capital stock as economically obsolete. After all, it can be put to a profitable use again under quasi-market conditions, just as would happen in the case of actual wage differentiation. In a way, it would make more sense to regard both wage differentiation and the employment subsidy as means to re-establish market conditions as far as possible, and thus to *prevent a premature* capital obsolescence from coming about, because the true standard of reference to evaluate the validity of a capital stock is not its actual age or its physical appearance, but its chance to be run again profitably under market conditions.

On empirical grounds, it is hard to see that the danger of preserving an outdated capital stock is very important under the circumstances nowadays prevailing in eastern Germany. Given the dramatic shrinkage of industrial production and the vast number of plant closures which have already taken place and which are to a large extent irreversible for technical reasons, the introduction of an employment subsidy today would

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59 See Section II. of this paper.

hardly lead to retrogressive plant re-openings on a large scale. It is more likely that its main impact would be a reorientation of business plans for existing capacities that are currently in use and for future investments. At any rate, it would not be inconceivable to limit employment subsidization to those jobs that are created by new investments after a certain date and thus explicitly exclude the 'old' parts of the capital stock from receiving any aid at all. Legally, this would mean that employment subsidies were treated just like the present schemes of investment subsidies which also provide aid only to marginal investments that modernize the old capital stock or create a new one.[60]

Ad [ii]. There are basically three arguments which have been made against employment subsidies on the grounds of practicability. First, it has been argued that, once a system of investment aid is established as at present for eastern Germany, it can hardly be replaced by a wage subsidy scheme because that would involve a serious break of confidence on the side of potential investors.[61] This is why employment subsidies would have to be introduced on top of investment aid, and that would be unacceptable for obvious reasons. In our view, this argument is unconvincing: if its logic were taken seriously, all political action that involved a significant change in the type of aid scheme in whatever direction would amount to a break of confidence, which is an absurd consequence. Of course, any legal change would have to contain a clause that all subsidy obligations resulting from investment decisions already made would be met by the government. In practice, this could be handled by fixing a deadline up to which all applications for investment

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60 In this respect, it is very important to recognize the difference between the focus of an early employment subsidy proposal made by Akerlof et al. [1991] and the employment subsidy schemes we are considering here. For Akerlof et al. [1991], the focus was on preventing the wholesale breakdown of the 'old' eastern German industry, i.e. on keeping the old capital stock at a high degree of utilization. In turn, our focus is on the role of East/West-wage differentiation to steer the economy into a growth path that guarantees full employment in the long run, with the employment subsidy being simply a second-best means to mimic a wage differentiation on the labour cost side.

61 See Sachverständigenrat 1991/92, § 540.

aid would be treated according to the status quo ante. In addition, one might grant all firms that have made subsidised investments in the East the option to pay back the present value of the investment aid received and to choose instead an employment subsidy that will be paid ex post for all jobs created and in the future for all jobs that survive up to the envisaged termination date of the subsidy scheme. Thus, in effect, no firm that has made an investment on the grounds of the old legislation, will be put in a worse position by the legal change than the one that it could anticipate at the time of its investment decision.

Second, it has been argued that employment subsidies will be 'extremely costly' for the government because there will be many firms that make an inframarginal use of them, i.e. cashing in the subsidy and producing more or less at the same level as they would without it. These firms will make additional profits from subsidization and drive up wages, thus possibly leading to the 'perverse' outcome that the wage level in the East would be higher than in the West.[62] The implicit corollary to this line of reasoning is that, even without subsidization, there will be 'enough' investment in the East, meaning that a very large part of future investment will take place anyway, be there wage subsidies or not. Of course, this is a completely different starting-point of policy analysis than the one we take on basis of what we have argued above,[63] namely that there is a very high likelihood of a dual economy emerging in the East. Thus, the case against employment subsidies on the grounds of inframarginal costs is simply one of different empirical premises, not of a different view on practicality. In any case, it is unclear whether and, if so, how the current investment aid schemes can avoid inframarginal subsidization which appears to be a general problem of all aid systems: why should a wage subsidy have an inherent tendency to lead to higher inframarginal costs than an investment subsidy? A direct comparison would only be possible if one had an empirical basis for deciding which of the two types of schemes would lead to more inframarginal abuse at the *same* present value of subsidies paid. Obviously, this question

62 See Sachverständigenrat 1991/92, § 541.

63 See Section III. of this paper.

cannot be answered without a host of information on investment and labour demand schedules at different points in time, which is simply not available. Likewise, the danger of inframarginal firms driving up wages in the East may just as well result from the lower capital costs per unit of time which is the consequence of the investment aid granted at the time of capital installation.[64] Be that as it may, a 'perverse' outcome of higher wages in the East than in the West could be avoided by paying employment subsidies only for those workers who do receive no more than the western-standard contractual minimum. Hence if, for competitive reasons, a firm in the East paid higher wages than the western contractual minimum to its labour or to some subset of its employed workforce - say, to high-skilled engineers - then it would have to do so at unsubsidized market conditions. Note that this option of 'punishing' supercontractual payments by cutting off subsidies is not given in the present system where eastern firms with (subsidized) capital costs could well go ahead and drive up eastern wages beyond western levels.

Thirdly, it has been argued that any employment subsidy scheme has a built-in tendency to perpetuate itself: once the subsidies are granted for whatever period, powerful lobbies will demand their continuation - just as regularly happened with subsidy programs for whatever sector of the economy.[65] Correct as this prediction may be, it is hard to recognize any genuine difference in this respect between investment aid and employment subsidies. Prima facie, such a difference may be found in the fact that unlike employment subsidies, investment aid is paid out in one stroke so that an investment aid program can be stopped at any time

64 Apparently, those arguing in favour of investment aid and against wage subsidies on these grounds misinterpret an investment subsidy as a once-for-all grant (say, like a tax rebate) that does not influence the profitability of subsequent production. Properly accounted for as a reduction of the user cost of capital in any period of production, however, the investment aid has an effect on production profitability that is completely analogous to the one of labour subsidization. Theoretically, one could conceive of a present value of all future wage subsidies accruing during the prospective period of subsidised production, and thus end up with a once-for-all aid for job creation that is analogous to the once-for-all aid for capital creation.

65 See again, Sachverständigenrat 1991/92, § 541.

with no fiscal obligations left over for the future. Again, this is a very superficial difference with no clearcut political implications: just as investment aid, so an employment subsidy program can be legally stopped at any point in time. The present value of the remaining subsidies to be paid out in meeting old obligations from the scheme are then no more than the counterpart to the subsidies that would have to be paid out immediately in an investment aid scheme. So, again, there is only an accounting difference between the two schemes, not a genuine economic one (apart, of course, from the fact that they subsidize different factors): in both schemes, there will be a subsidization (in the economic sense) of some factors of production for long after the deadline for subsidy application.

In one respect, however, there is a genuine practical problem of timing when granting wage subsidies: to be of any significant importance for capital formation in the East, an employment subsidy would have to be paid for a period that is roughly comparable to the economic life expectancy of the capital stock that is complementary to the subsidised labour input. For that matter, a period of 10-15 years may be a sensible time horizon.[66] Economically, there is not much difference in this respect to the investment aid as has been argued above: after all, the 'time horizon' of the present value of investment aid is also given by the life expectancy of the capital stock created. Politically, however, things may look differently: a government may refrain from making a fiscal commitment over such long periods of time, because the commitment could become rather unpopular if the rationale for the aid disappears faster than originally expected. In this case, the once-for-all investment aid has the advantage of being not fiscally visible anymore after the end of the program. E.g., if a sudden non-anticipated improvement of the labour market conditions in eastern Germany pushed the eastern unemployment rate below the western average, any government which then abolished the subsidy program, but had to meet the obligations from

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[66] Note that this is another point of departure of our analysis from the one made by Akerlof et al. (1991) who focus on the preservation of the old eastern capital stock, not the creation of a new one, and thus restrict the envisaged wage subsidy to the short run.

prior commitments for a rather long time to come, may find this politically embarrassing. To some extent, this problem could be overcome by simply making the payment of the subsidy conditional upon the existence of a minimal East/West differential in unemployment rates and possibly also making the degree of subsidization a function of the extent of the East/West-unemployment gap: if that were done from the start of the program, private investors would find themselves in basically the same situation as in a free labour market where any anticipation of local wage costs on the grounds of prevailing unemployment is always a falsifiable prediction of future market developments.

All in all, the practical difficulties of an employment subsidy scheme may be solvable, if only with a rather complex system of transition. Briefly summarized, the skeleton of a valid labour subsidy legislation to replace the many present investment aid schemes may consist of the following ingredients:

- From day x in the future, all programs of investment aid for the East will be stalled, and an employment subsidy of y per cent of the contractual minimum wage will be paid for all newly created jobs in eastern firms (measured as the net balance of jobs created on the plant level since some reference point in time in the past).
- The new law will apply for a limited period of time - say, 5 years - with the option of being renewed thereafter; any subsidy will be paid for a longer period - say, 15 years - and under the explicit proviso that the unemployment rate in the East (or any specific region of the East) will remain substantially - say, 5 percentage points - above the western average.
- All firms that have invested in the East and have received investment aid under the old legislation have the option either to keep their aid and renounce on any future employment subsidies, or to pay back the present value of their investment aid received so far and to obtain the right to employment subsidies from the time at which they have started (or will start) production with the new capital equipment.

Note that, from an administrative standpoint, such a unified employment subsidy scheme may hardly look complicated, but it is an open question whether it would be any more complicated than the plethora of different programs of investment aid and special credit facilities presently in use.[67] To minimize bureaucratic costs, the payment of subsidies may best be arranged as a tax rebate to be calculated and administered by the tax authorities.

Ad [iii]. A prominent argument in the recent policy debate has been that the introduction of employment subsidies would create a moral hazard problem for future wage bargaining because it would be taken by unions and employers' associations as a precedent of government's readiness to neutralize the negative impact of wage rises on unemployment by a compensatory provision of aid. It would thus create an incentive to opt for high wage levels in the future, which are not compatible with full employment and which may even jeopardize the principal of autonomous wage bargaining (Tarifautonomie) that forms the basis of industrial relations in Germany.[68]

In evaluating this common argument, one invariably ends up in very speculative considerations simply because, so far in Germany, there have not been any experiences with the application of employment subsidy schemes, at least not on a larger scale.[69] Under the particular circumstances of present-day eastern Germany, however, it is hard to

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67 For a survey, see, Deutsches Institut für Wirtschaftsforschung, Institut für Weltwirtschaft [1991b].

68 See, i.a., Sachverständigenrat 1991/92, § 541.

69 Employment subsidies have been paid since the late 1980s for the employment of long-term unemployed persons in the framework of a special program to ease the integration of the long-term unemployed. Obviously, this kind of program targeted at a small group of structually handicapped persons cannot give much empirical information to predict what will happen to collective bargaining in the case of an indiscriminate use of wage subsidies in a relatively large geographical area like eastern Germany. Similarly, the experience with special income tax reductions for the citizens of the formerly isolated city of West Berlin, which can be interpreted as a somewhat camouflaged form of an employment subsidy, is too small a base to draw conclusions from. In a broader sense, Swedish economists (see Calmfors, Forslund 1990) have presented econometric evidence for Sweden that the heavy use of labour market programs, which include the payment of employment subsidies for structually handicapped persons, did significantly contribute to upward wage pressure over the last three decades.

see why employment subsidies should really involve a serious moral hazard problem over and above the one which may already exist due to the present aid schemes. There are basically two reasons for this judgement. First, if there ever was a unique historical event in post-war German history, then it is German unification. In this sense, any subsidy scheme that has been put up or might be put up in the wake of unification carries a stamp of uniqueness. Sure enough, there have already been many special rules and provisions applied to the territory of the former German Democratic Republic that could have been viewed as setting dangerous precedents, but were in fact widely perceived by the public as being special measures to overcome the particular problem of merging the two Germanies. It is not clear why an employment subsidy scheme should make a qualitative difference in this respect.

Second, taking a somewhat broader view of the moral hazard problem involved in wage bargaining, it is quite likely that alternative models of subsidization such as investment aid schemes do signal more or less the same message of a government responsibility for employment to the bargaining parties as do wage subsidies. After all, both investment aid and employment subsidies are aimed at raising the rate of return of investment in eastern Germany that is too low because, at the given locational conditions of post-socialist eastern Germany, the eastern wage level is too high. Thus the difference between the two types of schemes appears to be one of subsidy technique, which does hardly touch upon the general character of both investment aid and employment subsidies as political means to compensate the impact of a wrong-headed wage policy. In fact, the lack of interregional wage flexibility in western Germany all over the last four decades is likely to be at least partly a consequence of the readiness of governments to back up a regional egalitarianism of collective bargaining by subsidising investment in structurally disadvantaged regions.

Taking a bird's eye view of the different lines of critique of employment subsidies, it is hard to avoid the speculative conclusion that it is more the refusal to accept the economic case for a long-run labour cost differentiation between the two Germanys on the grounds of a supposedly wrong-headed structural change than matters of practicability or moral hazard which provide the basic rationale for the critics' outlook. Or, to put it differently: if the critics were to accept the need for a long-term wage differentiation along our lines and if they further assumed that this wage differentiation would not be feasible due to some non-economic constraints, then they might find themselves hard-pressed in the direction of an employment subsidy scheme.

It is important to emphasize that we do *not* make a case for the actual introduction of employment subsidies in Germany. We rather defend the concept of employment subsidies against a critique that is in our view analytically unjustified. On these grounds, employment subsidization is better than investment aid, but - applied over a longer period of time - both come down to a wholesale political ratification of a disasterous wage policy, which will relieve the bargaining parties from the persistent pressure to revise their agreements and weaken the residual market forces of outsider competition towards lowering the eastern wage level.[70] For this very reason, genuine wage differentiation appears to be clearly preferable.

(ii) Investment Wages

In the context of the eastern German economic transformation it has been proposed to substitute investment wages for cash wages.[71] In its core idea, the proposal amounts to accepting East/West-equalization, but to make collective bargaining allow for agreements on the plant level to pay part of the collectively agreed minimum wage not in cash, but in terms of a share in the capital of the respective company, with the share taking whatever form is agreed upon. In effect, it would thus transform part of the firms' wage liability into a labour owned capital stock; it would allow the firm to reduce the burden of 'cash' labour costs and thus ease the restructuring process.

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70 Note that this line of reasoning is different from the moral hazard argument presented above which pointed to the general danger of setting an ex ante precedent, not to the consequence of ex-post ratification.

71 See Sievert (1992a, b), Fink (1992).

Whatever the merits and demerits of this proposal of workers' capitalism, which are independent of the particular eastern German situation[72], the proposal does not really tackle the core issues of the German labour market, namely the need for an East/West-differentiation to raise the rate of return on investment in the East. By its very logic, the proposal is a mere substitution of two types of wage payments so that, for a potential investor with a long-run time horizon, it would only be apt to raise the expected return if, somehow, the present value of all wage payments is reduced. However, this is very unlikely to be the case because workers will only consent if they will be compensated for the deferred payment of the wage by receiving an appropriate rate of return on the investment wage over the cash wage. If they will consent without this compensation, however, it comes down to a hidden form of East/West-wage differentiation. In short, it is the differentiation that matters at the end of the day, not the form in which this differentiation is presented. That may in fact be left to the workers on the plant level who can decide according to their own preferences whether they want to become capitalists in their own firm and at what price. In effect, investment wages have been proposed much more as a device to give existing eastern firms a kind of temporary 'breathing space' from the cost side rather than improving the general locational conditions for investment in eastern Germany across the board.[73] Hence, whether with or without investment wages, the case for wage differentiation stands.

A similar line of reasoning would apply if some form of profit (and loss) participation of labour would be proposed to help solving the eastern German problems. Again, the core question would be whether such a scheme helped not just to smooth the path of employment over the

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72 Roughly speaking, one may see an advantage in the fact that workers will have a long-term interest in a profitable operation of the company; on the other hand, if the shares are non-tradable, the workers may be stuck with an allocation of their savings, which is far off their personal preferences, because - in addition to the employment risk - they share in the risk of capital losses in just one firm.

73 Note that one of the main proponents of investment wages (Sievert (1992a, b)) clearly recognizes the analytical difference between a device to reduce the wage level, which his proposal is not, and a device to redistribute the wage burden over time.

business cycle, which it does under quite realistic assumptions[74], but whether and to what extent it would help to raise the profitability of investment in the East, i.e., roughly speaking, by how much it would reduce the present value of future labour costs. In this respect, however, the model is silent.

Of course, on a more tactical level of economic policy, any kind of investment wage or labour profit participation in eastern Germany that could help to overcome labour's resistance to a long-term wage differentiation should be regarded as a sensible step forward. However, it is hard to see why and how any such scheme could help in this respect simply because unions have revealed their preferences by opting for the fast wage equalization, and there has been no visible sign of resistance against this on the plant level.

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74 See Weitzman (1984, 1985, 1986) and Berthold (1990); for a general critique of the Weitzman-model as a device to reduce unemployment under the conditions of West Germany in the late 1980s, see Paqué (1990).

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